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ABSTRACT

A review of rhetorical techniques and behavioral and cognitive goals in the composition classroom leads to the conclusion that the center of rhetoric is invention. An analysis of heuristics in contemporary rhetoric demonstrates several benefits to the rhetor: first, a heuristic provides a structure on which to hand a vision of the range of solution historically or logically associated with the problem being addressed; second, it allows its user to select narrower categories of the vision it suggests; third, it allows the writer to attend selectively to the categories, assessing separately the relevance of the associations each category evokes to the anticipated unknown content; fourth, it allows the writer to segment the problem, selecting which aspect to pursue further, or which to pursue now and which later. A metaphor or analogy in an essay is a heuristic which functions as a generator; a heading or subheading in a technical report functions as a selector. Although heuristics lend themselves to being taught badly, teachers should present them as abbreviated conceptual frameworks rather than as sets of magical operations; as means, not ends; as cognitive, not behavioral. A heuristic as a set of procedures gives practice in the application of a well-founded scheme of perception to a particular rhetorical situation. (AEA)

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THEORY IN THE CLASSROOM: TEACHING HEURISTICS AS COGNITIVE GOALS

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THEORY IN THE CLASSROOM: TEACHING HEURISTICS AS COGNITIVE GOALS

Some colleagues tell me that theory of composition is nonsense. Learning to write is simply a matter of learning the rules, and practicing them.[1] Others admit that composition theory provides a useful background for a teacher of writing, but assert that theory per se should not intrude into the classroom--it confuses students. Neither of these positions recognizes that rhetorical invention, the center of any writing course beyond the basics, depends on explicit theory. Whether taught in the classical or the prevailing contemporary mode, techniques of invention should be couched in theory if they are to be useful to a person learning to write.

The argument against atheoretical notions of teaching writing gains some focus when phrased in contemporary pedagogical terms: The most prevalent type of technique for invention is heuristic technique; and the distinction between teaching technique-without-theory and teaching technique-with-theory is much like the distinction between teaching toward behavioral goals and teaching toward cognitive goals. Heuristic technique is cognitive: to work, it needs theory.

Cognitive Goals

A teacher who avoids theory in the classroom is left with bare technique: he has his students memorize grammatical and rhetorical rules, practice their use, and divine instances of them in literature. The techniques he teaches, most often, are the conventions of style and format in the community to which

the course is addressed. Teachers of business writing teach the conventions of the business community; teachers of technical writing teach the conventions of the scientific and technological communities. Teachers of general composition choose various audiences for their students' writing: the student-peer community, the community of educated essay-readers, even the community of essay-grading English teachers.

The advantage of teaching sheer convention is that teachers can easily define the curricula of their courses in terms of behavioral goals: acceptable "terminal behavior" for a student finishing the course is verified through measures of his adherence to the conventions of the target community. Thus, a teacher who states behavioral goals of "coherence" or "organization" looks in a student's work for signs of coherence and organization conventional in the literature of the community the student is supposed to be addressing: topic sentences and transitions in general essay writing, hierarchical subdivision of subject in technical writing, and so on. These are important matters to teach, but they do not touch the center of rhetoric: invention.

A curriculum that lends itself to complete definition in terms of behavioral goals is an advantage of a largely bureaucratic sort. Many universities require it, because it facilitates grading procedures which are clearcut, objective, and convenient. But it is a "possibly dangerous" convenience, according to the Commission on the English Curriculum of the National Council of Teachers of English. "Real damage to English instruction may result from definitions of English in the behavioral mode," the Commission maintains.[2] The Commission fears that while behavioral definition may suit some aspects of composition pedagogy, "humanistic aims" may be distorted by phrasing in behavioral terms, or may be left out of a curriculum because they cannot be verified behaviorally.

One of the humanistic aims easily left out is not hard to spot. Teachers of sheer convention are concerned, John Warnock writes, "not with writerly development, but with verbal hygiene."[3] "Communication educators who ignore the centrality of reflection in their students' communication learning," Richard L. Conville writes, "run the risk of 'turning out' students who think the answer to what is good communication is in the back of the book."[4] An aim of education that is left out when excellence is equated with adherence to behaviorally defined conventions is the development of that union of theory and practice which Whitehead called "intellectual vision"[5]: perception that transcends particular conventions, that gives the ability not simply to mimic excellence, but produce it; a guiding vision by which a student can comprehend and learn from his continuing communicative experiences, even when the composition course is years behind him and he and his audiences have changed.

Rhetoricians who believe that behaviorally stated goals insufficiently define what they should be teaching have taken to supplementing behavioral goals with cognitive goals. "Cognitive" in this usage refers to "the learner's concrete, unique, personal, unobservable, and internal experience."[6] A teacher who teaches toward cognitive goals attempts to give shape to a student's internal experience; attempts to engender modes of perception in the student. Two cognitive goals that Jo Sprague suggest, for example, are "to understand the notion of process and to be more receiver-oriented."[7] Richard Conville uses Gregory Bateson's terminology: teaching toward cognitive goals is teaching how to develop ways of "punctuating" the stream of events.[8]

The distinction between behavioral goals and cognitive goals sheds some light on the classical distinction between invention and the other departments of rhetorical technique which apply to writing: arrangement and style.

The departments of arrangement and style incorporate techniques as recommended behaviors, but the department of invention incorporates techniques as methods by which a rhetor may attain a disciplined, holistic, and productive perception of any specific rhetorical situation, and by which he can infer from that perception responses to the situation which seem likely to realize his intention. The goal that techniques of invention aim toward is cognitive: to perceive the rhetorical situation in a way that suggest reasonable arguments.

Put metaphorically, invention includes techniques by which a rhetor creates the deep structure of his composition; arrangement and style deal with surface structure. Using techniques of invention, the rhetor generates ideas about the subject which satisfy both his own intention and the audience's understanding. Using techniques of arrangement, the rhetor places those ideas in effective order. Using techniques of style, the rhetor finds words and phrases which precisely articulate those ideas.

Obviously, the three departments of composition are interdependent, plied most profitable by the rhetor cyclically or simultaneously, rather than sequentially. The stylistic choice of recondite words, for example, may suggest the inventional choice of arguments of definition. The sequential presentation of alternative arguments, a matter of arrangement, may suggest that the alternatives be phrased in parallel structure--a matter of style. But just as obviously, invention is dominant. Without invention, the other two departments are pointless. The perception of relationships among the rhetor, the subject of discourse, and the audience, and of responses appropriate to those relationships, is the source from which all decisions about style and arrangement must flow.

For Aristotle, invention was the center of rhetoric. The first two books of his Rhetoric are concerned with invention; only the third deals

with style and arrangement. The techniques of invention he described--principally the division of all possible premises for arguments into the categories of ethos, pathos, and logos, and the division of all occasions for discourse into epideictic, deliberative, and forensic categories--punctuate the realm of discourse for the rhetor. They give the rhetor a conceptual framework which allows him to locate a specific situation within the realm of all possible discourse, and compose his response to the situation accordingly.

From the perspective of the contemporary "new" rhetoric, also, invention is the center of rhetorical technique. In the contemporary view, the function of rhetoric is "advocacy of realities,"[9] so the matter of finding reasons for an audience to believe in the realities a rhetor advocates is essential. The contemporary view values collaboration between rhetor and audience, so a rhetor's capacity to perceive the audience he confronts as part of the situation he confronts is of utmost importance, as a means of collaboration. In both Aristotelian and contemporary invention, the goal is cognitive: the rhetor should experience the rhetorical situation, including the audience, as a source for arguments.

Heuristics

In the United States, in this century, only two different kinds of technique for invention have prevailed. The first is what Ross Winterowd has called the "looky-feely-smelly school of invention," which perhaps bears a greater resemblance to the Romantic concept of inspiration than to anything a modern acadmic would be willing to call method.[10] The second kind of technique is heurisitic technique, which was favored by the classical rhetoricians who followed Aristotle, and has been revived in recent years by such leading

rhetoricians as Winterowd, Kenneth Burke, and Richard Young.

Heuristic technique, simply described, is based upon sets of categories, each set organized so that it confronts the whole of the problem it is designed to cover, one step at a time. "The process of composition," Frank D'Angelo writes, "is a movement from an undifferentiated to a differentiated whole"[11]--a movement from an idea grasped as a vague gestalt to the same idea grasped in explicit verbal detail. A heuristic technique in rhetoric is a general plan, applicable to many different situations, for making such a move, by reviewing orderly sets of categories. The division of all rhetorical technique into categories of invention, arrangement and style is a simple heuristic, because it allows a rhetor to narrow his attention to one of the departments at a time as he goes about composing.

Classical and contemporary rhetoric employs many such sets of categories, many of them interrelated, some simple, some more complex. Even the most simple are valuable: as Winterowd points out, they are "tremendously useful as devices for organization, even when they are theoretically trivial."[12] But the less trivial they are, the better they are; the more thoroughly they are keyed to a coherent view of rhetorical situations in general, the more likely they are to suggest arguments appropriate to a particular situation. Rhetorical heuristics, to meet their function, should be theory-laden, drawing their technical categories from a philosophic perspective on what human communication is and ought to be.

The best known heuristics in contemporary rhetoric are several which spring from classical theory, and two which spring from contemporary theory: Burke's Pentad and Young, Becker, and Pike's tagmemic heuristic. Aristotle's principal heuristics divide all possible premises for arguments into three groups (ethos, pathos, logos), all possible occasions for discourse into three archetypes (epideictic, deliberative, forensic), and all possible

premises for logical argument into twenty-eight topics. The Pentad, Burke's heuristic, finds all possible sources for belief in five interacting divisions of the abstract rhetorical situation (act, agent, agency, scene, purpose). The tagmemic heuristic breaks all possible treatments of subject matter into three overriding perspectives (the subject as particle, the subject as wave, the subject as field). In each heuristic the categories interact, forming what Burke calls "ratios," providing a rhetor a greater number of options than the number of basic categories in the heuristic. The Pentad, for example, allows for ten ratios: act-agent, act-scene, agent-scene, and so on.

Roughly speaking, when a rhetor uses a heuristic, he tries out the abstract characteristics of each category as a potential conceptual model for the apparent characteristics of the situation he confronts. In doing so, he generates ways to talk about his subject with his audience; he generates ideas; he generates arguments.

Janice Lauer, in her review of contemporary (1967) rhetorical heuristics, follows the lead of many psychologists by dividing heuristic method into two parts: a generator function and a selector function.[13] That is, heuristics provide a rhetor ways to generate information about his problem, and they provide the rhetor ways to select among the ideas generated.

Put differently, however broad and tentative a person's original conception of the problem, however vague his anticipation of an unknown solution, a heuristic first gives him a structure on which to hang a vision of the range of solution historically or logically associated with his general type of problem. It suggests a plan of inventory for the contents of his vagueness, prodding relevant associations out of his memory and pointing out gaps in his conception of the problem. Second, a heuristic allows its

user an opportunity to select ever more narrow portions of the vision it suggests. The display of associations it evokes is not chaotic, but orderly, classified as categories. This classification allows a problem-solver to attend selectively to the categories, assessing separately the relevance of the associations each category evokes to the unknown content he anticipates. It allows him to segment his problem, selecting which aspect to pursue further, or which to pursue now and which later.

A metaphor or analogy might be regarded as a heuristic which functions more potently as a generator than as a selector. If our problem were to compose an essay on romantic love, for example, and we were to remember the frequent poetic claim that love is a rose, we would have a simple heuristic device with which to seek out solutions to the problem. "Rose" symbolizes a cluster of attributes at least some of which our cultural tradition imputes to love. We could review the characteristics we attribute to roses--fragility, sweetness, short temporal duration, heart-rending beauty, and so on--holding up each against our vague apprehension of the nature of love, considering each as a starting point for further pondering.

Using "rose" as a heuristic for analysis of the human heart might serve as an example of what Winterowd would call "theoretically trivial," however consoling. In contrast, the Aristotelian heursitic category logos serves a generator function which is far from trivial theoretically. It brings to mind a philosophic tradition in which logic is a basis for reasoning different from, and superior to, emotion and culture, and leads quite reliably to ~~absolute~~ probable truth; it subsumes a host of patterns for development of arguments, such as cause and effect and quantitative comparison; it has been enriched by centuries of analysis and illustration in rhetorical criticism. Nor is the Burkean term "act" trivial theoretically. It calls to mind Burke's guiding metaphor, "life is theater," and serves as metonym

for a class of observations and judgments readily expressible in English. A heuristic's generator power depends on the rhetor's awareness of the theory from which it springs.

As for the selector part of heuristic method, it works in much the same way that a system of headings works in a technical report: as an information retrieval system. Technical writing teachers persuade students to use headings and subheadings in technical reports by explaining that headings allow a reader to find the information he needs from the report with the least effort, and at the same time help the reader keep an overview of the entire report in mind as he focuses on a specific part. The budget director turns to the section headed "Financial Considerations," skipping over the pages headed "Laboratory Procedures," but the system of headings keeps him aware that laboratory procedures are part of the context in which he must consider finances. The optimal system of headings allows the average reader to find the part of the report which includes the information he needs as efficiently as possible, and yet remains simple enough to be grasped entire by the reader as a gestalt of the whole report.[14]

A heuristic functions for a writer in the process of writing the way a coherent system of headings functions for a reader in the process of reading. In effect, a heuristic is a system of headings for the rhetorical situation, or some aspect of the rhetorical situation, in the abstract. With the help of a heuristic a rhetor can pay attention first to one aspect of the rhetorical situation, then to another, all the while keeping a vision of the whole. When a rhetor selects logos for attention, for example, he not only gains access to all the ideas associated with that category, but he does so in contrast to, and so in the context of, pathos and ethos. A heuristic's selector power depends on a theoretically sound division of

the unity of discourse, and a rhetor's best use of the divisions depends on his awareness of their theoretical unity.

Teaching Heuristics as Cognitive Goals

As techniques of invention, heuristics have obvious drawbacks. For one thing, they are too cumbersome to remain in the repertoire of a working writer after he leaves school. A teacher of writing can require his students to march through the terms and ratios of the Pentad, but he cannot expect a businessperson twenty years beyond freshman composition to be bothered. Perhaps an executive called upon to speak at a Rotary luncheon, willing to take advice from any quarter, might spend an afternoon in the attic scanning an old rhetoric text, but it seems unlikely that he would intone "ethos, pathos, logos" before picking up his dictaphone each day.

Moreover, heuristics lend themselves to being taught badly, and often are. "Heuristic procedures are frequently conceived of as directions for thawing out frozen, pre-baked topics on a tagmemic grid," Ann Berthoff complains.[15] The mechanics of heuristic technique can be so fascinatingly complex that teachers forget the purpose of the technique. Instead of presenting heuristics as abbreviated conceptual frameworks, rooted in philosophy, teachers sometimes present them as sets of magical operations; incantations which evoke acceptable writing from the spirit depths of the subconscious. They put the emphasis wrongly on the manipulation of categories, rather than on what the categories mean.

But the observation that a tool may be misused is no argument against its value when used well. A teacher is not wrong to construe a heuristic as a set of behaviors; a set of operations through which a student ought to learn to procede systematically. The teacher is wrong, however, if he does

not realize that the operations themselves are not the point of the heuristic. Heuristics are means, not ends; the goal is cognitive, not behavioral. What a heuristic does as a set of procedures is give practice in the application of a well-founded scheme of perception to a particular rhetorical situation. The scheme of perception is what ought to be embedded firmly in the graduate's ways of thinking twenty years later, not the routine of consulting checklists of categories.

Perhaps something like the distinction between behavioral and cognitive goals is what the classical rhetoricians had in mind when they insisted that techniques of invention need not be applied assiduously "except when we are in the position of mere learners."[16]

> Quintillian envisioned the time when, as a result of study and practice, the student would acquire that "innate penetration" and "power of rapid divination" which would lead him directly to those arguments suited to his particular case. Eventually, he would arrive at the happy condition in which the arguments would "spontaneously follow the thought."[17]

A similar distinction seems to be what authors of current textbooks have in mind when they write that "the idea is to internalize the principles upon which these heuristic patterns are based,"[18] not to memorize the patterns of categories themselves. Mere memorization may meet behavioral goals, but not longer-range cognitive goals. A teacher can check a student's behavior by looking in the student's work for evidence of plotting against the five terms of the Pentad, or the nine boxes of the tagmemic grid, but the teacher cannot check to see whether the student has made the view of rhetorical situations on which the heuristic is based a habit of perception. The formal category structure of a heuristic is a technique of pedagogy, not invention; it withers away as the student becomes practitioner. The technique of invention which should remain is a way of perceiving rhetorical situations: a pattern of "punctuation," a theory, an applied philosophy of rhetoric.

If the terms of a heurisitc are in any way magical incantations, their magic is what Robert Penn Warren has called "the magic of the name." The narrator of A Place to Come To remembers that he becaome a serious student for the first time when he realized that finding a name for a thing makes the thing real. "And if you found the names for all the things of a world, you could create a world that was real and different. The crazy word on the page was like a little hole in a great wall. You could peek through the hole and see a world . . ."[19]

Without a theoretical grounding in a philosophy of rhetoric, a heuristic is pointless; there is no world beyond the great wall. When the formal category structure drops away, nothing is left. But if the student can see through the heuristic terms to a world beyond, if he internalizes that world, if he learns to see experience in the manner of that world, then when the formal category structure drops away, nothing is gone but the wall.

For this reason, a teacher ought to make explicit the the theory that lies behind a set of heuristic categories: he ought to sketch the world behind the wall; make it plain to see. As a generator, a heuristic suggests the range of that world; as a selector, it suggest the world's order. A teacher ought to fill out those suggestions, helping students transform heuristic procedures into ways of seeing rhetorical situations. If he is teaching the Pentad, he ought to make explicit the dramatistic metaphor for human life; if he is teaching the tagmemic heuristic, he ought to make explicit the system-theory assumptions on which it is based. The way of seeing symbolized through heuristic categories--the theory, and not the bare categories themselves--is finally the source of invention.

Notes

[1] John Warnock, "Who's Afraid of Theory?" College Composition and Communication (February, 1976),

[2] J. Maxwell and A. Tovatt, On Writing Behavioral Objectives for English Champaign, IL: National Council of Teachers of English, 1970).

[3] John Warnock, "New Rhetoric and the Grammar of Pedagogy," Freshman English News (Fall, 1976), p. 15.

[4] Richard L. Conville,"Cognitive Goals in Communication Learning," Communication Education, 26 (March, 1977), p. 118.

[5] Alfred North Whitehead, quoted by Bernard Murchland, "Colleges Ought to Inscribe Whitehead's Words Over Their Gates," The Chronicle of Higher Education, August 9, 1976, p. 24.

[6] Conville, p. 114.

[7] Conville, p. 114.

[8] Conville, p. 115.

[9] Barry Brummett, "Some Implications of 'Process' or 'Intersubjectivity': Post Modern Rhetoric," Philosophy and Rhetoric, 9 (1976), p. 31. Brummett is representative of those contemporary rhetoricians who view rhetoric as "epistemic"--which is to say that rhetoric is the method by which communities create and sustain knowledge. In substance, the epistemic rhetoricians typify "new" rhetoricians in general, with the exception that the epistemic rhetoricians overlay their style and vocabulary with allusions to philosophy of science and the sociology of knowledge.

[10] W. Ross Winterowd, Contemporary Rhetoric (New York: Harcourt, 1975), p. 39.

[11] Frank D'Angelo, "An Ontological Basis for a Modern Theory of the Composing Process," Quarterly Journal of Speech, 64 (February, 1978), p. 77.

[12] Winterowd, p. 2.

[13] Janice Marie Lauer, "Invention in Contemporary Rhetoric: Heuristic Procedures," dissertation, University of Michigan, 1967, pp. 20-28.

[14] For a discussion of the use of headings as an information retrieval system, see Theodore A. Sherman and Simon S. Johnson, Modern Technical Writing (Englewood Cliffs, NJ: Prentice-Hall, 3rd Edition, 1975), pp. 30-35.

[15] Ann E. Berthoff, "Towards a Pedagogy of Knowing," Freshman English News, 7 (Spring, 1978), p. 1.

[16] Quintillian, quoted by Edwa rd P. J. Corbett, Classical Rhetoric for the Modern Student (New York: Oxford University Press, 1965), p. 96.

[17] Corbett, p. 96.

[18] Berthoff, p. 1.

[19] Robert Penn Warren, A Place to Come To (New York: Dell, 1977), p 31.